

Report on occurrence of Yellow Sea Snake *Hydrophis spiralis* off Kerala coast

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Sea snakes play an important role in the marine food web and studies on their diversity and distribution are very limited in India. Globally, 70 species of sea snakes have been reported under the family Elapidae which is divided into two subfamilies (i) Laticaudinae and (ii) Hydrophiinae. Sea snakes belonging to the subfamily Hydrophiinae are considered as 'true sea snakes' with 62 species which are viviparous (give birth to live young at sea). Laticaudinae sea snakes called the 'sea kraits' have 8 species and are oviparous. They come to the land for mating and to lay eggs.

Sea snakes have several adaptations such as vertically flattened, paddle-like tail for locomotion,

valved nostrils for excluding water while diving and a sublingual gland for excreting excess salt. Many sea snakes have the potential to dive beyond 100 m and remain underwater for more than 2 hours. So far, 25 species of sea snakes have been reported from India. All the sea snakes are protected under schedule IV of Wild life (Protection) Act, 1972. However, sea snakes are not listed under CITES and hence they are harvested heavily in Southeast Asia for human consumption and use in traditional medicine.

Incidental catch of sea snakes in the gill nets, trawlers and purse seines are observed in India. Five species of sea snakes caught as by-catch in trawls



Fig. 1. *Hydrophis spiralis* (dorsal side)

have been reported from Kerala, namely, Beaked sea snake *Enhydrina schistosa*, Short sea snake *Lapemis curtus*, Annulated sea snake *Hydrophis cyanocinctus*, Spotted sea snake *Hydrophis ornatus* and Yellow-bellied sea snake *Pelamis platura*. During an experimental trawl fishing operation by FRV *Silver Pompano* off Kochi, mainly *E. schistosa* and *L. curtus* were caught. On 20.10.2015, a Yellow sea snake *Hydrophis spiralis* (Fig.1) was caught as by-catch in the fish trawl operated at 33.3 metre depth off Kochi (10°01'24"N; E 76°00'02"E). Along with the sea snake, other fishes like *Nemipterus japonicus*, *Epinephelus diacanthus*, *Scomberomorus commerson*, *Rastrelliger kanagurta*, *Mene maculata*, *Decapterus russelli*, *Stolephorus commersonii*, *Saurida* sp., gastropods like *Tibia* sp., *Bursa* sp., and crabs such as *Charybdis feriatus* and *Portunus sanguinolentus* were also obtained.

The longest yellow sea snake specimen recorded in the world from Penang, Malaysia was 2.75 m. The species was first described as *Hydrus spiralis* in the year 1802 by George Shaw based on the holotype specimen collected from Indian Ocean deposited in British Museum of Natural History and the length of the specimen was only 2 feet. Occurrence of this species from India was first reported as *Hydrophis robusta* by H.M. Phipson in the year 1886 based on the specimen collected from Alibaug, Maharashtra and deposited with the Bombay Natural History Society. Later, Prater (1924) described the species as *Leioselasma spiralis* based on the materials collected from Indian coasts and named the sea snake as 'Narrow-ringed Sea Snake'. Occurrence of yellow sea snake off Tamil Nadu coast is very common with most of the specimens being less than 2 m length. However this species is reported from Kerala for the first time. In India, the longest specimen of *H. spiralis* was measured as 2.50 m from Madras as reported by Wall in 1911. Smith (1943) reported that the species obtained from India had 41-48 annuli (dark black bands) while specimens from Persian Gulf had 46-54 annuli. The total length of the present specimen caught off

Kochi was 2.30 m and it had 65 bands. It was very aggressive and showed a ready to bite nature.

The taxonomical account of yellow sea snake is given below.

Yellow Sea Snake *Hydrophis spiralis* (Shaw, 1802)

Hydrus spiralis Shaw, 1802. *Gen. Zool.*, **3**, p. 564.

Hydrophis robusta Phipson, 1886. *J. Bombay nat. Hist. Soc.*, **1**, p. 85.

Distira spiralis Wall, 1911, *J. Bombay nat. Hist. Soc.*, **20**, p. 858-863.

Leioselasma spiralis Prater, 1924. *J. Bombay nat. Hist. Soc.*, **30**, p. 174.

Hydrophis spiralis Smith, 1943. *Fauna. Brit. Ind.*, **3**, 453.

Hydrophis spiralis Karthikeyan & Balasubramanian, 2007. *Int. J. Zool. res.*, **3**, 115-117.

Hydrophis spiralis Rasmussen *et. al.*, 2011. *Zootaxa.*, **2894**, 1-20.

Diagnostic Characters

Total length 230 cm; elongated body, moderate head; 7 maxillary teeth behind poisonous fang, Rostral tips pointed protrudes downwards; body scales smooth, overlap; 65 narrow black bands encircle body, black spots on the ventral band ridge; 1 preocular and 2 postocular scales; eye diameter less than eye-mouth distance; 26 scale rows around neck, 33 on the middle, 331 on the ventrals; dorsal scales edged with black colour; body yellowish green above, pale yellow below; interspaces broader than bands posteriorly, black head with yellow horseshoe marking; tail with 6 dorsal bands, tip of the tail with black patch.

Distribution:

Indian Ocean, Persian Gulf and Arabian Peninsula, New Caledonia/Loyalty Islands, Southeast Asia. In India, it is distributed along both the coasts, but not common on the west coast.